Health Advisory:

Update on Avian Influenza (H5N1)

February 10, 2005

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FROM: **RONALD W. CATES**
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SUBJECT: **Update on Avian Influenza (H5N1)**

This update reviews 1) the current epidemiologic situation in Asia and 2) the U.S. surveillance, laboratory diagnostic, and infection control recommendations for avian influenza A (H5N1), which were most recently stated in August 2004. As detailed in the recommendations below, identification of possible imported cases of avian influenza A (H5N1) in the U.S. clinical setting depends on health-care providers consistently obtaining information on recent international travel and other potential exposures from persons who have certain respiratory symptoms.

Current Situation

Outbreaks of avian influenza A (H5N1) among poultry are ongoing in several countries in Asia, including Thailand, Vietnam, and Cambodia. Reports of sporadically occurring human cases of influenza A (H5N1) continued through January 2005. Thailand reported five human cases of influenza H5N1 (with four deaths) in September and October 2004, but no additional cases to date. Thirteen human cases of influenza A (H5N1) infection (with 12 deaths) have been reported by Vietnam since mid-December 2004; WHO has reported that 10 of these cases (with 9 deaths) have been confirmed.

One instance of probable limited human-to-human transmission of influenza A (H5N1) virus was reported in Thailand between a child and her mother and aunt in September 2004. Health authorities in Vietnam are investigating two possible instances of limited human-to-human transmission in family clusters. One instance involves two brothers in Vietnam with confirmed influenza A (H5N1) infections; a third brother was hospitalized for observation only and did not become ill. In the second instance, a daughter developed symptoms within 6 days of her mother's onset of illness, which was confirmed as influenza A (H5N1). Investigations are exploring possible sources of exposure and looking for other signs of illness in family members, other close contacts, and the general community.

In addition, the first human case of influenza H5 infection in Cambodia has been confirmed in a woman who was hospitalized in Vietnam and died. A joint mission between the Cambodian Ministries of Health and Agriculture and WHO is in Cambodia investigating the circumstances surrounding this case.

As of February 4, 2005, the cumulative number of confirmed human cases of influenza A (H5N1) reported in Asia since January 28, 2004, is 55 cases (with 42 deaths), according to WHO. This total includes the case from Cambodia.

The avian influenza A (H5N1) epizootic in Asia poses an important public health threat, and CDC is in communication with WHO and will continue to monitor the situation. The epizootic in Asia is not expected to diminish substantially in the short term, and it is likely that influenza A (H5N1) infection among birds has become endemic to the region and that human infections will continue to occur. So far, no sustained human-to-human transmission of the influenza A (H5N1) virus has been identified, and no influenza A (H5N1) viruses containing both human and avian influenza virus genes, indicative of gene reassortment, have been detected.

Travel Health Precaution

It is expected that the number of people traveling between the United States and certain parts of Asia will increase around the Lunar New Year, which occurred on February 9 this year. Chinese, Vietnamese, Cambodian, and Korean people celebrate the start of the lunar calendar year. Lunar New Year celebrations last for approximately 15 days in China, 3 days in Vietnam, and typically only 1 day in Cambodia and Korea.

On January 26, 2005, CDC issued a Travel Health Precaution notice about avian influenza A (H5N1). This notice is directed at travelers who may be returning from Vietnam to visit family and friends, especially during the upcoming holiday, and who may be at greater risk for exposure to poultry through food preparation or at farms and bird markets where infected poultry may not be readily detected. The notice outlines specific measures for travelers to take before, during, and after travel to Vietnam. CDC has not recommended that the general public avoid travel to any countries affected by influenza A (H5N1). For more information, see CDC's Travelers' Health website.

Enhanced U.S. Surveillance, Diagnostic Evaluation, and Infection Control Precautions for Avian Influenza A (H5N1)

CDC recommends maintaining the enhanced surveillance efforts by state and local health departments, hospitals, and clinicians to identify patients at increased risk for avian influenza A (H5N1) as described in HAN notices that were issued on February 3, 2004 and again on August 12, 2004. Guidelines for enhanced surveillance are as follows.

Testing for avian influenza A (H5N1) is indicated for hospitalized patients with

- radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established, AND
- history of travel within 10 days of symptom onset to a country (currently (2/10/05) Vietnam, Thailand and Cambodia) with documented H5N1 avian influenza in poultry and/or humans (for a regularly updated listing of H5N1-affected countries, see the OIE website and the WHO website).

Testing for avian influenza A (H5N1) should be considered on a case-by-case basis in consultation with state or regional epidemiologists for hospitalized or ambulatory patients with:

- documented temperature of >38°C (>100.4°F), AND
- one or more of the following: cough, sore throat, shortness of breath, AND
- history of contact with poultry (e.g., visited a poultry farm, a household raising poultry, or a bird market) or a known or suspected human case of influenza A (H5N1) in an H5N1-affected country within 10 days of symptom onset.

The primary point of contact at the Missouri Department of Health and Senior Services is Eddie Hedrick - Emerging Infections Coordinator - (573-522-8596, or e-mail hedrie@dhss.mo.gov. Evenings, weekends or holidays call (800)392-0272). Mr. Hedrick should be contacted if testing for Avian influenza is being considered.

Laboratory Testing Procedures

1. Prior to collecting lab specimens contact the State Public Health Laboratory at 573-751-3334. This will assist in ensuring that the proper specimens are obtained in the right quantity and that they are packed, and transported properly. The lab will also be able to track the specimens if they have been notified ahead of time.

2. The preferred kit for this type of specimen will be the SARs box, as was distributed last year. Many Local Public Health Agencies have a box on site or one should be available from the senior epidemiologist in the region. Boxes can also be ordered from the State Public Health Laboratory.

3. When specimens are collected, multiple specimens should be collected and multiple specimen types should be considered. The CDC lab has requested that they receive fresh clinical specimens regardless of what tests are done.

Virus Culture

Highly pathogenic avian influenza A (H5N1) is classified as a select agent, and culturing of clinical specimens for influenza A (H5N1) virus must be conducted under laboratory conditions that meet the requirements for Biosafety Level (BSL) 3 with enhancements. These enhancements include controlled access double-door entry with change room and shower, use of respirators, decontamination of all wastes, and showering out of all personnel. Laboratories working on these viruses must be certified by the U.S. Department of Agriculture. CDC recommends that virus isolation studies be conducted on respiratory specimens from patients who meet the above criteria **only if** requirements for BSL 3 with enhancements can be met.

Polymerase Chain Reaction (PCR) and Commercial Antigen Testing

Clinical specimens from suspect influenza A (H5N1) cases may be tested by PCR assays under standard BSL 2 conditions in a Class II biological safety cabinet. In addition, commercial antigen detection testing can be conducted under standard BSL 2 conditions used to test for influenza.

Specimens That Should Be Sent to CDC

Specimens from persons meeting the above clinical and epidemiologic criteria will be sent to CDC by the State Public Health Laboratory if

- The specimen tests positive for influenza A virus by PCR or by antigen detection testing.

CDC also will accept specimens from persons meeting the above clinical criteria even if they test negative by influenza rapid diagnostic testing if PCR assays are not available at the state laboratory. This is because the sensitivity of commercially available rapid diagnostic tests for influenza may not always be optimal.

Requests for testing must come through the state's regional medical epidemiologist or regional senior epidemiologist, who will contact the SPHL. The SPHL will contact CDC before sending any specimens to them for influenza A (H5N1) testing.

Interim Recommendations: Infection Control Precautions for Influenza A (H5N1)

Infection control precautions for H5N1 remain unchanged from the CDC interim recommendations issued on February 3, 2004. All patients who present to a health-care setting with fever and respiratory symptoms should be managed according to recommendations for Respiratory Hygiene and Cough Etiquette and questioned regarding their recent travel history. Isolation precautions identical to those recommended for SARS should be implemented for all hospitalized patients diagnosed with or under evaluation for influenza A (H5N1) as follows:

- Standard Precautions
    - Pay careful attention to hand hygiene before and after all patient contact
- Contact Precautions
    - Use gloves and gown for all patient contact
- Eye protection
    - Wear when within 3 feet of the patient
- Airborne Precautions
    - Place the patient in an airborne isolation room (i.e., monitored negative air pressure in relation to the surrounding areas with 6 to 12 air changes per hour).
    - Use a fit-tested respirator, at least as protective as a NIOSH-approved N-95 filtering face piece respirator, when entering the room.

For additional information regarding these and other health-care isolation precautions, see the Guidelines for Isolation Precautions in Hospitals. These precautions should be continued for 14 days after onset of symptoms until an alternative diagnosis is established or until diagnostic test results indicate that the patient is not infected with influenza A virus (see Laboratory Testing Procedures below). Patients managed as outpatients or hospitalized patients

discharged before 14 days should be isolated in the home setting on the basis of principles outlined for the home isolation of SARS patients (see http://www.cdc.gov/ncidod/sars/guidance/i/pdf/i.pdf).

Additional Avian Influenza A (H5N1) Information

- For information about reported outbreaks of avian influenza A (H5N1) among poultry, see the website of the World Organization of Animal Health (OIE).
- For information about human influenza A (H5N1) cases, see the WHO website.
- For clinical information about human influenza A (H5N1) cases, see:
    - CDC. Cases of influenza A (H5N1) - Thailand, 2004. MMWR 2004; 53:100-103.
    - Hien TT, Liem AT, Dung NT, et al. Avian influenza A (H5N1) in 10 patients in Vietnam. New England Journal of Medicine 2004; 350:1179-1188.
- For information about travel and avian H5N1 influenza, see the CDC Travelers' Health website.
- For general information about influenza, see the CDC Influenza website.